

ARCAM



**Alpha 3 amplifier handbook**

## Introduction

The Arcam Alpha 3 integrated stereo amplifier has been designed to provide a combination of high quality sound reproduction and sophisticated styling. The Alpha 3 amplifier has five inputs for turntable, compact disc player, tuner, video sound output and tape recorder.

The Alpha 3 provides outputs for both speakers and headphones, and produces low level signals suitable for recording on to tape. Although designed for simplicity of operation the Alpha 3 has comprehensive tone control facilities which enable good results to be obtained with a wide variety of programme material.

A matching Alpha tuner, Compact Disc player and Alpha speakers are also available. Please ask your dealer or distributor for full details, or write to Arcam at the address shown at the end of this booklet.

## Installing and using your Alpha 3 equipment

### **Mains connections**

Check that the voltage setting of the amplifier, as indicated on the back panel, is the same as the local mains supply. The wires in the mains lead are coloured in accordance with the following code:

Green and yellow - Earth  
Blue - Neutral  
Brown - Live

As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green and yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured green or green and yellow. The wire which is coloured blue must be connected to the terminal which is marked by the letter N or coloured black or blue. The wire which is coloured brown must be connected to the terminal which is marked by the letter L or coloured red or brown.

Export units for certain markets have moulded mains plugs fitted as standard. If the mains plug is fused fit a 5 amp fuse for the Alpha 3 amplifier.

The AC supply inlet to the Alpha 3 amplifier uses a standard IEC chassis mounting plug. The IEC line socket on your mains lead and the IEC plug on the Alpha 3 units are a **tight fit**; before first using an Alpha 3 amplifier it is therefore important to ensure that the socket is pushed **firmlly home** into the chassis plug.

## **Rear panel connections**

**Please refer to diagrams on inside of rear cover**

All inputs and tape outputs are via RCA phono connections. For most equipment, the right hand channel output is indicated by a red plug, and the left hand channel by a black or white plug.

### **Disc Input**

This input is only suitable for use with turntables fitted with a moving magnet or high output moving coil cartridge. If your turntable is fitted with a low output moving coil cartridge you will need to use some form of external step-up device (a transformer or head amplifier) between the cartridge and the Alpha 3. If your turntable is fitted with a flying earth lead, connect it to the ground terminal directly above the disc input. **Never** try to use any other audio equipment (such as a CD player or tape deck) through the disc input. The input will be overloaded and the sound will be badly distorted.

### **CD, Video and Tuner inputs**

These inputs may also be used as general purpose inputs for sources with a line level output, such as a second tape recorder.

### **Tape input / output**

Signals can be received from the line output, and sent to the line input of a tape recorder via these sockets.

### **Speaker outputs**

The speaker outputs will drive speakers within the range of 4 to 16 ohms impedance. The speaker binding posts will accept bare wires or 4 mm banana plugs. The speaker cable's positive conductor must be connected to the red terminals, and the negative conductor to the black terminals. The positive conductor of the cable is usually marked as such, or may have a ridge running down the length of the outer insulation.

When fitting 4 mm plugs, ensure that the positive conductor is connected to the red plug, and the negative conductor to the black plug. When using bare wires, strip back approximately 12 mm, (1/2") and twist the bare ends tightly. Unscrew the binding post and insert the wire underneath, then tighten. Check that no stray strands can short to other terminals, or to the chassis.

### **Operating two pairs of speakers**

If desired, it is possible to operate two sets of 8 ohm impedance (or higher) speakers with the Alpha 3 amplifier. One pair is connected to the 'direct' speaker terminals, and the second pair is connected to the 'switched' terminals.

The speakers connected to the 'direct' terminals will work all the time. The pair connected to the 'switched' terminals can be muted by inserting a 1/4" (6.35mm) jack plug into the headphones socket on the front panel of the amplifier. This jack plug can be stereo or mono, and need not be connected to anything to operate the speaker mute switch.

### **Bi-wiring**

If your speakers are bi-wirable, you can conveniently use both pairs of speaker terminals on the Alpha 3 to bi-wire your speakers, and improve the sound of the system. Alternatively, the cable runs to each speaker can be commoned together at the amplifier end, in order to leave a set of terminals free to drive a second pair of speakers.

### **Speaker fuses**

These are 2 amp fast blow 20mm fuses fitted internally. They may blow if the amplifier is run continuously at very high level into the correct speaker load, or run at high level into a speaker of too low an impedance (usually less than 4 ohms), or used to drive two sets of low impedance speakers, or run into a short circuit.

They are user-replaceable, and a spare fuse is provided inside the amplifier. However, if they blow consistently in the absence of any of the above conditions, please consult your dealer.

The speaker fuses are located inside the amplifier next to the speaker terminals. If a fuse needs to be replaced, first **switch off the amplifier and unplug it from the mains**. Remove the cover by unscrewing the two screws on the top of the cover. Lift the cover slightly, and slide it out towards the rear of the unit. The damaged fuse can now be removed. Replacement of a new fuse is simply the reversal of this procedure. Do not replace with a fuse of greater value than 2 amps (or with a 'slow blow' or 'anti-surge' type) since this will endanger both the amplifier and your speakers. This will also invalidate your guarantee.

### **IMPORTANT!**

**BEFORE REMOVING THE COVER, ALWAYS SWITCH OFF THE AMPLIFIER AND UNPLUG IT FROM THE WALL SOCKET.**

## **Front panel controls**

**Please refer to the diagrams on inside of rear cover**

### **Input selector switch**

The input selector switch, which is situated on the far left of the front panel, selects which input signal is fed to the speakers and headphones. The selected signal is also fed to the tape 'out' sockets.

### **Tape monitor switch**

The tape monitor switch is generally left in the 'off' position (switch out), so that the programme selected by the input switch is routed to the speakers. When the tape monitor switch is depressed, the return signal from the tape recorder is routed to the speakers.

The tape monitor switch also allows off tape monitoring if a three head tape machine is being used. By depressing the switch the signal recorded onto tape can be routed to the speakers, allowing direct A/B comparisons as the recording is made. With the tape monitor switch depressed the off-tape signal is the only signal available to the speakers.

### **Direct switch**

When this switch is pressed in, the bass, treble and balance controls become inoperative. The purpose of the direct switch is to bypass these circuits. This can result in a slightly clearer and more dynamic sound. This can be particularly effective when using the Alpha 3 with a top quality CD player, but the action of the switch takes place on all inputs, not just the CD input.

### **Volume**

The volume control adjusts the sound level for both the speakers and the headphones.

### **Bass**

The bass control cuts low frequencies when turned anti-clockwise and boosts them when turned clockwise. The flattest response is obtained when the control is in the centre 'click' position.

### **Treble**

The treble control cuts high frequencies when turned anti-clockwise and boosts them when turned clockwise. The flattest response is obtained when the control is in the centre 'click' position.

### **Balance**

The balance control is used to move the stereo sound image to the left or right. It can be used to compensate for imbalance in room acoustics or input signals.

### **Headphones socket**

The headphones socket accepts any dynamic headphones fitted with a standard 1/4 inch (6.35mm) stereo jack plug. If your headphones are fitted with a smaller jack (usually 3.5 mm), your dealer can supply a suitable adaptor. The headphones may mute the speakers, or not, as required (see **Operating two pairs of speakers**, page 2). This output is not suitable for driving most electrostatic headphones.

### **Power**

The amplifier is turned on by pressing the mains power switch. The green light indicates that the power supply in the amplifier is operating - it will continue to glow for a short time after the amplifier has been switched off. A gentle 'click' or 'pop' may sometimes be heard shortly after turning the amplifier off. This is perfectly normal, and will not harm your speakers.

### **Tape recording and replay**

The tape input/output is designed to suit most reel-to-reel and cassette tape recorders.

#### **Recording**

Select the signal source to be recorded using the selector switch (disc, tuner, CD or video). Then set the correct recording levels on your tape recorder and switch it into 'RECORD' mode.

During recording the volume and tone controls have no effect on the signal being sent to the tape 'out' sockets.

#### **Replay**

Depress the tape monitor switch and then switch your tape recorder into 'PLAY' mode.

### **Connecting cables**

We strongly recommend the use of quality speaker and interconnect cables with your hi-fi system. The better the components used in your system, the more important it becomes to match them with good cable. We have found interconnect and speaker cables from the AudioQuest range to be particularly suitable. Detailed information on the AudioQuest range of cables may be obtained from your dealer or the factory.

### **Hints and Tips**

Follow the manufacturer's instructions on the placement of speakers for the best results. Generally, speakers should be mounted on dedicated stands, and sited away from corners.

Always ensure that the speaker cable is connected securely to the output terminals, with no loose strands of wire, and that the mains connections are tight and fully home in their sockets.

Keep the turntable away from the speakers to avoid acoustic pickup by the turntable from the speakers - they should not be placed on the same piece of furniture.

The amplifier will get quite warm when being used at high levels. This is perfectly normal. However, if it becomes too hot to touch, switch off the amplifier at once and consult your dealer.

If there is a lot of hum with the disc input selected, check that the earth lead from the turntable is connected to the ground terminal just above the disc input sockets, and that the amplifier is correctly earthed via the mains lead.

Ensure that the amplifier is not directly underneath the turntable, or next to any unit containing a large mains transformer! (Check by moving the unit and assessing whether the hum level changes).

#### **If your system does not work check that:**

1. The amplifier is switched on and the green LED is on.
2. The source is plugged into the correct input sockets.
3. The selector switch is switched to the correct source.
4. The speakers are connected to the amplifier correctly.
5. The tape monitor switch is not 'in' when trying to use another input.
6. The volume control is not set to minimum.
7. The speaker fuses have not blown.
8. The fuse in the mains plug has not blown.

#### **If sound comes out of one speaker only check that:**

1. Both speakers are connected to the amplifier correctly.
2. The balance control is not set fully clockwise or anti-clockwise.
3. Both left and right channels of the source are connected to the inputs correctly and the input wiring is not faulty. (check by swapping left and right input connectors).
4. A speaker fuse has not blown.

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4. A speaker fuse has not blown.

## **Technical specification**

### **Alpha 3 amplifier**

(Noise and sensitivities ref. 40W into 8 ohms at 1kHz.)

#### **OUTPUT POWER** (typical)

##### **Both channels driven**

Into 8 ohms 40W. (20Hz-20kHz at 0.5%THD)

##### **Single channel driven** at 1kHz

Into 8 ohms 50W typical. Into 4 ohms 80W typical.

##### **Harmonic distortion**

At 30W, 8 ohms at 1kHz 0.02% typical.

#### **FREQUENCY RESPONSE**

##### **Disc Input**

Typically +/- 0.5dB 60Hz - 20 kHz, -3dB at 20Hz.

##### **Other inputs**

Typically +/- 0.5 dB 10Hz - 20 kHz.

##### **Tone Controls**

Maximum variation +/-5 dB at 50Hz and 15 kHz.

#### **INPUTS**

##### **Disc**

(suitable for MM and 'high-output' MC cartridges.)

Sensitivity 2.2mV, impedance 47k ohm/100pF.

Signal to noise ratio (CCIR) 75 dB.

Overload margin 33 dB.

##### **CD, tuner, tape and video**

Sensitivity 170mV

Signal to noise ratio (CCIR) 95dB

Input impedance 20k ohm

Overload margin 30dB.

#### **OUTPUTS**

##### **Tape output**

Nominal output level 150mV, impedance 2k ohm

##### **Headphones**

Maximum output level into 600 ohms 10V rms. Output impedance 330 ohms. Suitable for headphones of 8 ohms to 2k ohms impedance.

##### **Loudspeakers**

Nominal output level 40W per channel. Suitable for speakers of 4 ohms or higher nominal impedance.

#### **GENERAL**

##### **Power supply**

240V nominal, 230VA max. May be dealer adjusted to 220V and 120V nominal. (100V models to special order)

##### **Internal mains fuse**

800mAT (slow blow) for 240V or 220V operation.

1.6AT (slow blow) for 120V or 100V operation.

The internal mains fuse is not user replaceable.

##### **Size (overall)**

430 mm W X 248 mm D X 84 mm H.

##### **Weight**

4.0 Kg. nett.

4.6 Kg. packed.

## Guarantee for UK sales

This equipment has been fully tested and a full record of these tests made before despatch from the factory. Both the workmanship and the performance of this equipment are ( except as set out below ) guaranteed against defects for a period of two years from the date of purchase, provided that it was originally purchased from an authorised UK dealer under a consumer sale agreement. ( The words "consumer sale" shall be construed in accordance with Section 15 of the Supply Of Goods ( Implied Terms ) Act 1973 ).

The manufacturers can accept no responsibility for defects arising from accident, misuse, abuse, wear and tear, neglect or through unauthorised adjustment and/or repair, neither can they accept responsibility for damage or loss occurring during transit to or from the person claiming under this guarantee.

This guarantee covers both labour and parts, and is transferable to subsequent purchasers, but the liability of the manufacturers is limited to the cost of repair or replacement of the defective parts ( at the discretion of the manufacturers ) and under no circumstances extends to consequential loss or damage.

### Guarantee for overseas sales

Equipment not purchased in the UK is generally guaranteed by the distributor in the country of purchase only. For further details, please contact your distributor.

### Claims under this guarantee

This equipment should be packed in the original packing and returned to the dealer from whom it was purchased or, failing this, to any other authorised Arcam dealer. If it is not possible to return the equipment by hand, then it should be sent carriage prepaid by a reputable carrier. If the original packing is not available, replacement packing can be purchased from the manufacturers. The equipment should **NOT** be sent by post.

**DO NOT CONSIGN THE EQUIPMENT TO ARCAM UNLESS YOU HAVE BEEN SPECIFICALLY REQUESTED TO DO SO BY THE MANUFACTURER'S TECHNICAL SALES OR SERVICE DEPARTMENTS. DO NOT UNDER ANY CIRCUMSTANCES ATTEMPT TO DISASSEMBLE THE EQUIPMENT BEFORE DESPATCH.**

If you have any difficulty complying with these requirements, please contact the manufacturers at the following address:

ARCAM,  
Pembroke Avenue,  
Denny Industrial Centre,  
Waterbeach,  
Cambridge,  
CB5 9PB,  
England.

Telephone: ( 0223 ) 440964  
Fax: ( 0223 ) 863384

In either case you should state clearly your name and address, the date and place of purchase together with a brief description of the fault. In the event of equipment being returned which, after having been tested, is found to comply with the published specification, the manufacturers reserve the right to charge a reasonable fee for testing the equipment, and for the return carriage.

### Enquiries

The manufacturers are happy to answer any queries you may have regarding the use of this equipment on the condition that this enquiry is by letter and a stamped addressed envelope is provided. You should state clearly the serial number of the unit, the dealer from whom it was purchased, and the date of purchase.

**THIS GUARANTEE IN NO WAY VARIES OR REMOVES A PURCHASER'S STATUTORY RIGHTS.**

Part number SH018B  
Issue 2 10/91



# ALPHA 3 INTEGRATED STEREO AMPLIFIER

PHONO CD TUNER VIDEO



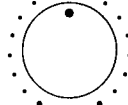
TAPE



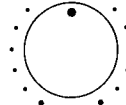
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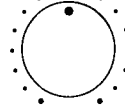
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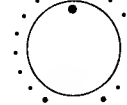
BASS



TREBLE



BALANCE



PHONES



POWER



CAUTION—SHOCK HAZARD

DO NOT OPEN

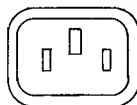
ATTENTION—RISQUE DE CHOC—NE PAS OUVRIR

ACHTUNG—VOR OFFNEN DES GERÄTES NETZSTECKER ZIEHEN

POWER

INLET

50–60 Hz



100 V

110/120 V

220/240 V

230 VA MAX

## ARCAM ALPHA 3 STEREO AMPLIFIER

DESIGNED AND MADE IN THE U.K. BY

A & R CAMBRIDGE LTD

DENNY INDUSTRIAL CENTRE

WATERBEACH, CAMBRIDGE, CB5 9PB



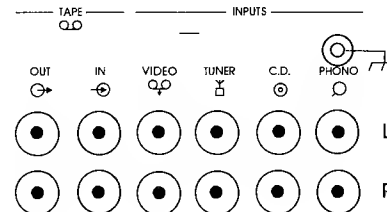
SPEAKER OUTPUTS 4 OHMS MIN



DIRECT

USE SWITCHED SOCKETS  
TO MUTE LOUDSPEAKERS WHEN  
HEADPHONES ARE INSERTED

SWITCHED





**CHANGE OF MAINS VOLTAGE (ALPHA 3 AMPLIFIER)**

**WARNING** - The unit must be unplugged from the mains supply when changing the wiring or the mains fuses since the fuse is at mains potential even with the unit switched off.

The Alpha 3 has a multi voltage transformer \* so the same transformer can be used for 240V, 220V and 120V by moving two of the three wires, (orange, yellow or brown) and changing the fuse rating as necessary. The wire in the bottom left hand corner determines the mains voltage, i.e. orange for 240V, and the other two wires go into the holes marked "Spare Wires". The black wire does not move. The pcb legend is shown below.

**240V WIRING (800mA ANTI-SURGE FUSE)**

<div><input checked="" type="checkbox"/> BROWN SPARE WIRES</div> <div><input checked="" type="checkbox"/> YELLOW</div>	<div><input checked="" type="checkbox"/> BLACK</div>
<div><input checked="" type="checkbox"/> ORANGE (This wire determines the voltage)</div>	<div>240V ORANGE 220V YELLOW 120V BROWN</div>

**220V WIRING (800mA ANTI-SURGE FUSE)**

<div><input checked="" type="checkbox"/> BROWN SPARE WIRES</div> <div><input checked="" type="checkbox"/> ORANGE</div>	<div><input checked="" type="checkbox"/> BLACK</div>
<div><input checked="" type="checkbox"/> YELLOW (This wire determines the voltage)</div>	<div>240V ORANGE 220V YELLOW 120V BROWN</div>

**120V WIRING (1.25A ANTI-SURGE FUSE)**

<div><input checked="" type="checkbox"/> YELLOW SPARE WIRES</div> <div><input checked="" type="checkbox"/> ORANGE</div>	<div><input checked="" type="checkbox"/> BLACK</div>
<div><input checked="" type="checkbox"/> BROWN (This wire determines the voltage)</div>	<div>240V ORANGE 220V YELLOW 120V BROWN</div>

\* The first 100 Alpha III's have a 240/120V transformer and do not have the extra yellow wire. To convert these to 220V requires a new transformer.